976. This rejection is respectfully traversed. The Examiner has no basis for the statement that the toughness of each layer is fairly anticipated by Dontula (976). Dontula does not set forth toughness. Toughness is dependent upon issues such as chemical structure, cross-linking, and the amount and direction of orientation of the polymer sheet. It is not directly dependent upon modulus and toughness may differ substantially among similar modulus materials. In view of the failure to disclose toughness, the Examiner cannot properly consider the Dontula (976) reference as anticipating the property of toughness. Toughness is more important in relation to cutting of the sheet than modulus and this property is a property of interest in the instant application. Therefore, it is respectfully requested that this rejection be reconsidered and withdrawn.

In paragraph 5 claims 2-8 and 18-21 stand rejected under 35 USC 102(e) as anticipated by Dontula et al. (656) as set forth in paragraph 7 of the office action of February 25, 2005. The Examiner states that Dontula (656) discloses all features of the instantly claimed invention except modulus and toughness of each layer. The Examiner states that the Dontula(656) reference teaches the instant invention as it uses the same polymers and the modulus of each layer reads on the instantly claimed invention. The Examiner states that a suitable toughness of each layer is also clearly anticipated by Dontula (656). . This rejection is respectfully traversed. The Examiner has no basis for the statement that the toughness of each layer is fairly anticipated by Dontula (656). Dontula does not set forth toughness. The toughness is dependent upon issues such as the chemical composition of the polymer utilized, cross-linking of the polymer utilized and the amount and direction of orientation of the polymer sheet. Toughness is not directly dependent upon modulus and may differ substantially among similar modulus materials. In view of the failure to disclose toughness the Examiner cannot properly consider the Dontula (656) reference as anticipating. The property of toughness is more important in relation to cutting of the sheet than modulus and this property is a property of interest in the instant application and not recognized in Dontula (656). It is respectfully requested that this rejection be reconsidered and withdrawn.

In response to the applicant's arguments that toughness is dependent on issues such as chemical structure, cross-linking, and the amount and direction orientation of the polymer sheet and is not directly related to modulus,

the Examiner has urged that Dontula teaches the same subject matter and chemical structure of the instant as well as the same application. The Examiner states that toughness is therefore also disclosed in the references. The Examiner states that modulus and tensile toughness are fundamental mechanical properties of material and that in other words modulus and toughness are measured by the same testing method and state the same set of testing data only expressed in different terms. As such, the Examiner states that the Dontula references disclose the same subject matter and the same modulus of the instant invention. Therefore, the toughness is the same as the instant invention. It is respectfully urged that this argument is in error.

Toughness and modulus are different properties. Although measured by the same test, there is no constant correlation between the numbers. The Dontula references do not provide any hint as to toughness and the Examiner can not properly allege a correlation to toughness by the use of only an overlapping modulus between the claimed invention and the cited references. The following paragraph and figures are a technical discussion of measurement of toughness and modulus. As shown, modulus is the generally straight line until yield and toughness is the area under the curve until breaking of the sample. They do not correlate as toughness appears to depend on the amount of stretch that is possible. Stretch creates area under the curve. Toughness has been found to be important to cutting. The range preferred for cutting is set forth in the toughness range of claim 18 and not disclosed or suggested in the cited Dontula references.

A basic description of material properties can be obtained from a tensile test. In this test, the load necessary to produce a given elongation is monitored as the specimen is pulled in tension at a constant rate. A load versus elongation curve is the immediate result of such a test (see Figure 1). A more general statement about material characteristics is obtained by normalizing the data for geometry of the specimen. The resulting stress versus strain curve is shown in Figure 2. Engineering stress (or from here onwards just known as stress) is defined as the ratio of the load on the sample to the original cross-sectional area of the sample. The engineering strain (from here onwards just known as strain) is defined as change in sample length (more specifically gauge length) at a given load to the original (zero stress) length of the sample.

Figure 2 can be divided into two distinct regions: (a) elastic deformation and (b) plastic deformation. Elastic deformation is a temporary deformation, which is fully recovered when load is removed. The elastic region of the stress-strain curve is the initial linear portion of the curve. Plastic deformation is a permanent deformation. It is not fully recovered when the load is removed. The plastic region is the nonlinear portion generated once the total strain exceeds its elastic limit.

The slope of the stress-strain curve in the elastic region is the modulus of elasticity (E) or Young's modulus or sometimes just known as modulus. The linearity of the stress strain-curve in the elastic region is a graphical statement of Hooke's law. The stress necessary to cause 0.2% of the permanent deformation is called as yield strength. Plastic deformation occurs beyond the yield point i.e. where permanent deformation starts. During plastic deformation the sample "necks down", and fails at a point. A useful piece of information is strain at failure. It is very important to know the whether a material is both strong (characterized by modulus) and ductile (characterized by strain or % elongation at failure). The term toughness is used to describe combination of both the properties, and is defined as the total area under the stress-strain curve.

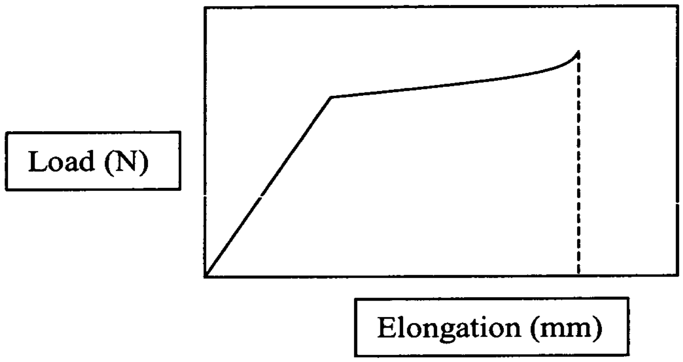

Figure 1: Load v/s elongation (tensile test)

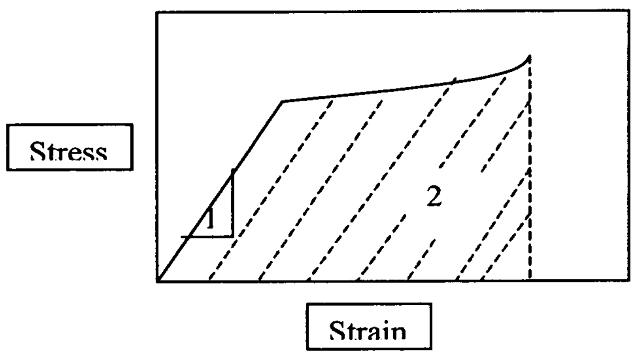

Figure 2: Stress versus strain curve obtained by normalizing data for sample geometry. In the above figure, 1 indicates slope of line or modulus; 2 indicates shaded region under the curve or toughness

Therefore, it is respectfully urged that a prima facia rejection is not proper as the Examiner has only shown modulus and has not pointed to any suggestion of toughness in the cited references.

It is respectfully urged that the rejections under 35 USC 103 be reconsidered and withdrawn and that an early Notice of Allowance be issued.

Respectfully submitted,

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.